1. SUMMARY

1.1 Project Objective

There are four objectives to the proposed BP Cherry Point Cogeneration Project.

1. To provide reliable, efficient, and cost-effective combined heat and power to the Refinery.
2. To provide efficient and cost-effective electrical power to the region.
3. To minimize reliance on outside sources of electrical power.
4. To minimize impacts to the environment.

1.2 Purpose Of And Need For Action

The Cogeneration Project will serve two primary purposes in response to two related needs. First, the Project will provide steam and electricity needed by the Refinery to maintain Refinery operations. Second, the Project will provide electricity to the northwest power grid which is needed to meet growing regional demands for electricity.

1.2.1 Refinery Needs

The Refinery operations require approximately 85 MW of electricity. Historically, BP has relied upon electricity purchased by third parties and steam generated by boilers located on site. However, the Refinery's reliance on third party sources for electricity has exposed the Refinery to the recent extreme volatility in the electricity markets. Generating electricity through the Cogeneration Project will help to insulate the Refinery operations from this market volatility.

Refinery operations also require approximately ~~600,000 pounds per hour~~ 510 thousand pounds per hour (kpph) of steam. That steam is generated throughout the Refinery as a by-product in a number of energy saving devices, but primarily by four gas fired utility boilers. The boilers provide the supplemental steam and the steam pressure control as the Refinery steam demand changes. The Cogeneration Project could produce the steam currently produced by the utility boilers more efficiently and at less cost. It would also enable BP to shut down these boilers, ~~reducing~~resulting in an expected reduction in total criteria pollutant air emissions.

1.2.2 Regional Power Needs

The Western Electricity Coordinating Council (WECC) was formed in September 2002 with the merger of the Western Systems Coordinating Council (WSCC) and the Southwest Regional Transmission Association (SWRTA). ~~, organized in August 1967,~~ The WECC coordinates management of the electric power system for the western part of the continental United States, Canada, and Mexico. ~~The WSCC~~ It is the largest of ten regional councils that make up the North American Electrical Reliability Council (NERC) and is subdivided into four major regions, the North West Power Pool (NWPP), California, Arizona-New Mexico, and the Rocky Mountain Area. Each of these regions is connected to neighboring regions and power is imported or exported between them to balance supply and demand for the entire system. The state of Washington is part of the

NWPP region that is also comprised of British Columbia, Alberta, Oregon, Idaho, Utah, northern Nevada and western portions of Montana and Wyoming.

During the period 1982-1998, the WSCC experienced steady electricity demand and consumption growth with electricity demand growing over 50% from 84,000 MW to 134,000 MW. The NWPP had the smallest demand increase of all WECC regions over this period, growing 43% during this time. The NWPP's peak demand fluctuated year-to-year by 15% though in the 1990s its peak demand fluctuated less[1].

WSCC and NWPP generation additions did not keep pace with the rates of growth during the 1990s; the capacity shortfall was masked by higher than average hydroelectric production in the 1995-1999 timeframe. This shortage in generating capacity and a dry weather year in 2000 set the stage for electricity shortages and extreme price volatility.

These conditions sparked a boom in power plant development among independent power producers and also the shutdown of the region's 10 aluminum smelters, representing some 3,150 MW of demand. All told, demand fell 8.1% in 2001 versus 2000 and electricity consumed dropped 8.6% from 2000 levels.[2]

Year ~~2000~~ 2001 peak electricity demand in the NWPP and ~~WSCC~~ WECC was ~~56,200~~ 51,660 MW and ~~130,900~~ 125,040 MW respectively, and grew at an average rate of ~~1.8~~1.5% per year over the ~~1990-2000~~ 1991-2001 period. The WECC expects ~~E~~electricity demand growth ~~is expected~~ to continue at ~~2.0% and 2.2~~2.5% per year until ~~2010~~2011 for the NWPP and WECC ~~WSCC, respectively~~assuming adverse conditions for hydroelectricity[3]. At these rates, demand in the ~~WSCC~~WECC will increase by ~~at least 2,870~~ 3,100 MW each year, and demand in the NWPP will increase by ~~at least 1,120~~1,290 MW each year. These growth rates will vary based on availability of hydroelectric power, recovery of the aluminum smelter demand, and the level of economic recovery in the region.

Electricity is different than other commodities in two ways 1) it cannot be stored economically so no inventories are available to lessen supply shortages, and 2) a large part of demand for wholesale electricity is relatively insensitive to price. Regulated utility purchasers of wholesale power typically have a "duty to serve" and therefore must purchase power at nearly any price to provide for their customers. These factors contribute to price volatility when demand approaches the available supply. The primary way prices are stabilized is to maintain more generating capacity than demand, creating a "reserve margin" of generation that can be called upon to provide electricity when unexpected shortfalls occur.

The ~~WSCC~~ NWPP and WECC ~~has~~have a variety of generating resources as shown in the table below.

[1] Trends in Electricity Consumption, Peak Demand, and Generating Capacity in California and the Western Grid, 1977-2000, September, 2001 Jolanka V. Fisher and Timothy P. Duane, Program on Workable Energy Regulation, University Of California Energy Institute, p. 17
[2] WECC 10 Year Coordinated Plan Summary 2002-2011, September 2002, p. 29 Tables 5 and 6.
[3] ~~WSCC 10 Year Coordinated Plan Summary 2001-2010, August 2001, p 15~~Ibid., p. 28 Table 4, Figure 2.

Generation Capacity by type as of January, 2002 (MW)[4]	NWPP	WECC
Hydroelectric	46,702	66,001
Nuclear	1,170	9,262
Coal	17,304	36,611
Oil	0	414
Gas	6,154	38,096
Gas – Peaking	2,840	12,821
Geothermal, Wind, Internal Combustion	1,442	6,003
Total	75,612	169,208

As can be seen from this chart, a significant amount of generation in both the NWPP and the ~~WSCC~~ WECC is hydroelectric. During average or wet years and particularly during spring and summer hydroelectric power is plentiful. In dry years, other forms of generation must make up the difference to provide the required reserve margin.

Bonneville Power Administration has stated that generation is needed in the northern Puget Sound area in order to provide for system stability[5]. If generation is not provided, additional transmission lines may be required from central Washington to support the northern Puget Sound area.

Many developers have reacted to recent supply shortfalls by proposing gas-fired power plants in the ~~WSCC~~ WECC and the NWPP. At one point during 2001, up to 13,000 MW of new generation was proposed for the region. A review of significant generation additions listed in the 2002-2011 WECC 10 year Coordinated Plan Summary shows that of the 10,426 MW of combined cycle generation projects proposed for the NWPP, 23% were constructed as of January 2003, 14% may be completed in the next 2-3 years, and the remainder are cancelled or on hold.[6] ~~3,600 MW of power plant projects are under construction in the NWPP and scheduled to come on line by the end of 2003. If they all came on line, they would correspond to about 3 years of demand growth in the region (assuming normal weather and economic conditions).~~

~~Many other power plants have been proposed. However, an~~ Another analysis of power plant development reported that on average 81% of projects in early development are cancelled before beginning commercial operation[7]. Of projects in advanced development (ready for construction except for financing) 52% will be cancelled. With the recent focus on merchant risk in the financial community it is even less likely that projects like these would go forward.

The Cogeneration Project is planned for operation beginning in ~~2005~~ 2006. With expected demand growth, additional generation will be needed to provide the required reserve margin for the NWPP.

[4] ~~WSCC~~WECC Information Summary, August ~~2001~~2002, p 6.
[5] BPA System Reliability study, p 51
[6] WECC 10 Year Coordinated Plan Summary 2002-2011, September 2002, p39 Table 18
[7] "Boom or bust? An analysis of the quantity of power plants actually built" Jim Okenfuss, Aquila, January 15, 2002.